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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,270	04/21/2004	Lelio Dante Greppi		9062
7590	03/15/2005			
LELIO DANTE GREPPI LAPRIDA 1632 ROSARIO, 2000 ARGENTINA			EXAMINER TRIEU, THAI BA	
			ART UNIT 3748	PAPER NUMBER

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/828,270	GREPPI, LELIO DANTE	
	Examiner	Art Unit	
	Thai-Ba Trieu	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

For the purpose of this Office Action, the claim 1 will be examined as best understood by the examiner.

An examination of this application reveals that applicant is unfamiliar with patent prosecution procedure. While an inventor may prosecute the application, lack of skill in this field usually acts as a liability in affording the maximum protection for the invention disclosed. Applicant is advised to secure the services of a registered patent attorney or agent to prosecute the application, since the value of a patent is largely dependent upon skilled preparation and prosecution. The Office cannot aid in selecting an attorney or agent.

Applicant is advised of the availability of the publication "Attorneys and Agents Registered to Practice Before the U.S. Patent and Trademark Office." This publication is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "***external timing gears***" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended

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replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

1. IN THE ASBTRACT:

Applicant is required to submit a substitute Abstract to meet the requirement set forth below:

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to **a single paragraph on a separate sheet within the range of 50 to 150 words**. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract

should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. IN THE SPECIFICATION:

The disclosure is objected to because of the following informalities:

- On Page 4, line 16, "**outled**" before "**ports**" should be replaced by -- **outlet** -- (for correcting typo error).
- On Page 5, lines 15-16, "**outled**" before "**gas**" should be replaced by -- **outlet** -- (for correcting typo error).

Appropriate correction is required.

Claim Suggestions

Applicant is suggested to revise claim 1 as the following, however, the revised claim is not indicated to be patentable.

-- An internal combustion engine of open closed cycle and binary fluid comprising:

air gyratory screws compressor with external synchronized timing gears;

an injector for injecting water to cool down compressed air flow coming from said air gyratory screws;

a sliding valve for regulating pressure ration modulation;

a heat exchanger for heating air;

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a first combustor for continuous combusting fuel and said heating air;

a first stage expander receiving hot gas at a constant maximum temperature, and including an outlet wherein steam is mixing with exhaust gas escaping from said first stage expander;

a second combustor wherein the mixture of said steam and hot gas escaping from said first stage expander to be superheated re-heating by continuous combustion;

a second stage expander receiving said steam and hot gases superheated re-heating by continuous combustion at a constant maximum temperature, and

an air-cooled condenser cooling down hot gases escaping from said second stage expander for condensing and recovering water. --

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically,

- the recitation of ***“the principal mechanical parts”*** renders the claim indefinite, since it is not clear that which mechanical parts of the system applicant has considered as the principal parts.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as anticipated by Yang (Patent Number 4,825,827) or, in the alternative, under 35 U.S.C. 103(a) as unpatentable over Yang (Patent Number 4,825,827), in view of Holtzapple et al (Patent Number 6,336,317 B1).

1. Yang discloses an internal combustion engine of open closed cycle and binary fluid with the principal mechanical parts driven by gyratory screws (1,2) with external synchronized timing gears (Not Shown) (See Figures 1 and 8; Column 1, lines 34-49, and Column 5, lines 30-38).

The recitation of “for an air compression cooled by water with flow and pressure air modulation, regenerative air heating, gases heating for continuous combustion, gas dry expansion from constant maximum temperature, gases and steam superheated reheating by continuous combustion, gas and steam superheated dry expansion from constant maximum temperature, and exhaust gases cooling for condensation and water recovery” is considered as the functional language. Yang discloses all the structural components of an engine system, which are read on those of the instant invention. Therefore, the Yang system is capable of performing the same desired functions as the instant invention having been claimed in claim 1.

2. In the alternative, Yang discloses an internal combustion engine of open closed cycle and binary fluid with the principal mechanical parts driven by gyratory screws (1,2) with external synchronized timing gears (Not Shown) (See Figures 1 and 8; Column 1, lines 34-49, and Column 5, lines 30-38) characterized for an air compression cooled by water with flow and pressure air modulation (via B), gases heating for continuous combustion (via C), gas dry expansion from constant maximum temperature (via D), gases and steam superheated re-heating by continuous combustion (via F), gas and steam superheated dry expansion from constant maximum temperature, and exhaust gases cooling for condensation and water recovery (via H) (See Figure 8, Column 1, lines 19-68, Columns 2-3, lines 1-68, Column 4, lines 1-28, Column 5, lines 18-68, Columns 6-7, lines 1-68, and Column 8, lines 1-49).

However, Yang fails to disclose the phase of regenerative air heating.

Holtzapple teaches that it is conventional in the engine art, to utilize a regenerator (108) for regenerating air heating (See Figure 2, Column 4, lines 64-67).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a regenerator for regenerating air heating, as taught by Holtzapple, to improve the efficiency of the Yang system.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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- Lindhagen et al. (US Patent Number 2,808,813) discloses a rotary positive displacement engine with helically grooved cooled rotors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB
March 11, 2005



Thai-Ba Trieu
Primary Examiner
Art Unit 3748